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PRELIMINARY CONTAMINATION
ASSESSMENT
CENTRAL FLORIDA MACK TRUCK
COMPANY
ORANGE COUNTY,
ORLANDO, FLORIDA

JAMMAL & ASSOCIATES, INC. Consulting Engineers

MEMBER

Associated Soil and Foundation Engineers, Inc.
American Consulting Engineers Council
National Society of Professional Engineers
Florida Institute of Consulting Engineers
American Society for Testing and Materials
American Concrete Institute

1675 Lee Road, 32789 ■ P.O. Box 333, Winter Park, Florida 32789 ■ Telephone (305) 645-5550

JAMMAL & ASSOCIATES, INC. Consulting Engineers

January 15, 1987
Project No. 87-03001

TO:

933 Lee Road, Suite 400
Orlando, Florida 32810

Attention: Mr. Albert M. Clark, Vice President

SUBJECT:

Preliminary Contamination Assessment,
Central Florida Mack Truck Company,
3100 Orange Blossom Trail,
Orange County, Orlando, Florida

Dear Mr. Clark:

Jammal & Associates, Inc. is pleased to present the results of our preliminary contamination assessment conducted for the above referenced property. The subject property is presently being utilized as a Mack truck service facility. We were retained by your firm to conduct a preliminary site evaluation regarding chemical contamination and environmental conditions. The results of our field investigations, laboratory testing and preliminary engineering assessment are presented herein.

The field investigation for this project consisted of the installation and sampling of seven (7) temporary groundwater monitoring wells. The groundwater samples were analyzed for various chemical constituents. Due to the nature of the

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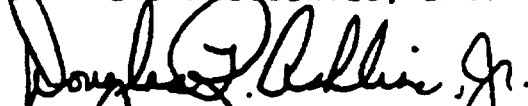
business presently operated at this site, emphasis was placed on the identification of petroleum related waste products, including volatile and synthetic organic compounds.

The results of our investigation generally conclude that chemical contamination of site soil and groundwater has occurred. Some of the synthetic organic chemicals identified in the groundwater exceed State standards. Results of our field program also indicate that the chemical contamination is probably not confined within the property boundaries. Additionally, adjacent properties to the west and south could also be contributing to the observed contamination. However, these sites were not investigated.

We appreciate the opportunity to provide our services for this project, and trust that the information presented in this report is sufficient for your purposes. If you should have any questions regarding the contents of this report, please do not hesitate to contact our office.

Sincerely,

DAMMAL & ASSOCIATES, INC.


Douglas R. Ashline, Jr.
Staff Engineer


Robert Oros, P.E.
Senior Hydrogeologist


Nicolas E. Andreyev, P.E.
Senior Project Engineer
Fl. Registration No. 35459

DRA/NEA/RO/:jc
13313



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1.0 INTRODUCTION

1.1 Background

This report presents a description and the results of a preliminary field investigation and engineering evaluation regarding chemical contamination of the property located at 3100 Orange Blossom Trail, Orlando, Florida. This document has been prepared as requested by ~~Southwestern Investment Properties, Inc.~~ to provide a preliminary understanding of the existing environmental conditions at the subject property. Presently, the site is ~~owned by Mr. [redacted]~~ and is occupied by an industrial business, the Central Florida Mack Truck Company, which functions as a truck service facility. The general location of the site is shown on the vicinity map presented as Sheet 1.

1.2 Purpose and Scope

The purpose of this report is to present the results of field investigations conducted at the subject site during January, 1987 and the subsequent preliminary assessment of data collected which pertain to synthetic organic chemical contamination of the property. It is our understanding that this report will serve as a portion of the basis for decision-making regarding the purchase of the property.

A scope of work was developed to:

- o Determine which chemicals (petroleum-related), if any, exist in the groundwater within the project site boundaries.



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- o Establish the general direction of groundwater flow in the uppermost water table aquifer as a basis for selection of groundwater sampling locations.
- o Evaluate the existing condition of surface soils and groundwater within the property with respect to past and present industrial uses of the site.
- o Develop preliminary information regarding the present environmental condition of the site.

The specific scope of services conducted for this project included the following:

- o Conduct a preliminary field reconnaissance program to visually document present industrial activity at the site; document areas of the site where chemicals have apparently been discharged on the ground surface, and document adjacent land use in the immediate site vicinity.
- o Install and sample seven (7) temporary groundwater monitoring wells at various locations on-site. Water samples were collected and chemically analyzed by a Florida Department of Environmental Regulation (FDER) certified laboratory for benzene, toluene, xylene and EPA 601 compounds (synthetic and volatile organic compounds).
- o Perform a preliminary evaluation of pertinent data and



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prepare a report describing the present condition of the site with regard to chemical contamination.

- o Review a site report prepared by Dames & Moore entitled "Confidential Report Survey and Assessment of Former Agricultural Chemical Plant Site, Orlando, Florida for Chevron Corporation" January 10, 1983.





2.2 Site History
The subject site was previously owned and operated by the Chevron Chemical Company as a chemical blending facility

The topography of the site is relatively flat, with on-site elevations estimated to be approximately +100 feet MSL, as interpreted from the U.S. Geological Survey (USGS) Orlando West quadrangle map. The site exists in a developed condition with buildings, cement foundations, and asphalt pavement covering approximately 60% of the site.

2.1 General
The project site is located within Section 15, Township 22 South, Range 29 East in Orange County, Florida. The property is bordered to the east by Orange Blossom Trail, to the west and south by industrial establishments, and to the north by a mobile home park. A ditch approximately 2 feet deep traverses the site in an east-west direction along the out-parcel located in the northern portion of the site adjacent to the mobile home park. A railroad right-of-way oriented in an east-west direction borders the southern property boundary. Lake Fairview is located approximately 1,000 feet northeast of the property. The total area of the site is approximately 4 acres. A site vicinity map and location plan are presented on Sheets 1 and 2, respectively.

2.0 SITE LOCATION AND DESCRIPTION

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for pesticides and other crop sprays (Dames & Moore, 1983). Two (2) washing ponds were located in the vicinity of the existing concrete pad at the time when the pesticide facility was in operation. Residues from chemical drums were washed into these ponds and allowed to percolate vertically downward through the soils. Utilization of the washing ponds was terminated in 1976. The ponds were excavated to a depth of approximately 14 feet below land surface and were backfilled with soil, automobile wreckage and other similar materials, as well as cement. Chevron Chemical Company later retained Dames & Moore (a consulting firm) to conduct a confidential contamination study at this site. A field investigation and chemical analyses of soil and water samples were conducted by Dames & Moore; the final report was submitted in January of 1983.

The results of the previous contamination assessment indicated that the State Maximum Contaminant Levels (MCL) and recommended limits identified by the U.S. Environmental Protection Agency (EPA) for pesticides, such as Lindane, Chlordane and DDD, as well as arsenic, had been exceeded by up to an order of magnitude in groundwater samples collected in the immediate vicinity of the abandoned washing ponds. Other on-site sampling locations showed evidence of pesticides exceeding State standards and EPA recommended limits in some instances, primarily to the northeast in the downgradient direction of prevailing groundwater flow. Dames & Moore (1983) concluded that the pesticides and arsenic contamination was contained within the boundaries of the site and that remaining high concentrations of these chemicals would be dissipated with



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time since the source of the contamination was no longer in existence. They also expected that the contamination would be contained within the surficial unconfined aquifer due to the low permeability of underlying clay deposits. The previous contamination of the site with pesticides and pesticide derivatives was not addressed by Jammal & Associates, Inc. during this investigation.



3.0 GEOLOGY

3.1 Regional Geology

The general stratigraphy in the site vicinity consists of unconsolidated clastic deposits which extend to a depth of approximately 150 to 200 feet and overlie the regional carbonate bedrock formations. The uppermost unconsolidated sediments consist of Pleistocene to Recent age sand deposits which comprise the upper 40 feet of the soil profile. Underlying the surficial sand and extending to the bedrock contact is the Miocene age, Hawthorn formation consisting of fine sand, clayey sand, silt and clay.

Underlying the Hawthorn formation is the Eocene age, Ocala group limestone. This formation along with the underlying Avon Park Limestone and Lake City Limestone collectively comprise the regional Floridan aquifer.

3.2 Site Geology

Considering the land use history of the site, it is probable that the surficial soils consist of disturbed local deposits and probably some fill. (Dames & Moore, 1983) The auger borings drilled at the site generally encountered consistent subsurface materials. The data acquired during the field program indicate that the site is generally underlain by brown to gray, fine to very fine quartz sands, occasionally containing small amounts of silt. The fine quartz sands extended to the terminated depths of the borings, approximately 15 feet below land surface. The majority of the borings drilled previously by



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Dames & Moore (1983) indicated a change in soil composition at an approximate depth of 33 feet. The relatively thick fine quartz sand zone is underlain by gray to black clay or silty clay which often occurs in layers which alternate with fine sands or silty sands. The clay zone was encountered in every deep boring drilled by Dames & Moore, and generally occurred at a depth of approximately 33 feet below grade.

Evaluation of the data acquired during the field program and a review of the earlier report submitted by Dames & Moore (1983) indicate, in general, very consistent subsurface conditions across the site. The fine quartz sands encountered in every boring were very similar, varying primarily in color and with an occasional modest silt content. The deeper clay bed is considered to underlie the entire site.

3.3 Regional and Site Hydrogeology

The groundwater regime within the general area consists of an unconfined aquifer, extending from near land surface to a depth of approximately 40 feet in the site vicinity, and the deeper, more extensive artesian Floridan aquifer. The unconfined aquifer is separated from the Floridan aquifer by a thick confining layer of clays, clayey sands, and silty sands. The majority of the water wells that have been constructed into the unconfined aquifer in the Orange County area are of small diameter, but generally provide sufficient water for domestic irrigation purposes.

The groundwater surface (water table) occurs at shallow



depths within the site vicinity and is typically within 5 to 10 feet of ground surface. Water and pressure levels in both the unconfined aquifer and deeper Floridan aquifer fluctuate seasonally, generally varying less than 5 feet in the unconfined aquifer and in excess of 5 feet in the Floridan aquifer.

The Floridan aquifer is highly permeable and is areally extensive. It is the principal aquifer of the Central Florida region. The Floridan aquifer is composed primarily of limestone and dolostone and is generally between 1,500 and 2,000 feet thick. Major water supply wells in the vicinity have been constructed into the Floridan aquifer. The top of the Floridan aquifer is located approximately 150 to 200 feet below land surface in the site vicinity. The primary source of recharge for the unconfined aquifer is rainfall which infiltrates through the surficial sands. The Floridan aquifer in Orange County receives most of its recharge by infiltration of surface water and rainfall in the western highlands where the confining beds are locally thin and semipermeable, and are overlain by thick deposits of permeable fine sands.

The quality of groundwater in the unconfined aquifer can exhibit considerable variation depending on a number of factors, including the composition of the aquifer, shallow soil conditions, and proximity to sources of surface contamination (i.e., farmland fertilizers, irrigation canals, effluent disposal, septic tanks, industrial waste disposal, etc.). Normally, the unconfined aquifer in this area is not used for potable water supply. However, the



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Unconfined aquifer is classified as G-II groundwater and, therefore, must meet water quality criteria for a potable water supply source.



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4.0 FIELD INVESTIGATIONS

4.1 Field Reconnaissance

The field program for this project included a preliminary site reconnaissance and the installation of seven (7) temporary groundwater monitoring wells. Water samples were collected from the monitoring wells using sampling equipment and appropriate decontamination procedures approved by the Florida Department of Environmental Regulation. The water samples were transported to Flowers Chemical Laboratory (a certified chemical laboratory) for analysis.

The site was inventoried to identify possible contaminated areas which exist as a result of the practices of the industrial business at this site. Various forms of undesirable wastes were evident at this site, ranging from automobile wreckage and other debris, to chemical wastes such as oils, greases, and antifreeze which apparently have been discarded by dumping on the ground.

During the field program, the presence of abandoned automobiles, trucks and other rubbish normally associated with motor vehicle repair shops was noted at several locations on the property. An open cement trough located adjacent to and running parallel with the railroad tracks behind the repair garage bays contained what appeared to be oil and grease sludges approximately 6 inches thick. The trough terminates approximately 60 feet from the southwestern corner of the property, discharging to a



cement tank in the ground. The grease tank overflows onto the surrounding soil. Greases, oils and other similar substances were oozing from a drainhole in the sidewall (south side) of the garage. The entire length of this wall beyond the drainhole was spattered with oil residues, 2 to 3 feet off the ground. Standing pools of what appeared to be ethylene glycol (antifreeze) were present at the bottom of the loading ramps in the parking/driveway area. Also, it is believed that the large cement structure north of the water tower was used in the past as an organic compound volatilizer due to the presence of spray heads located on each corner of the structure. However, its actual use was not confirmed. A petroleum odor was evident on most of the site during the field studies.

4.2 Monitoring Well Installation

A total of seven (7) temporary groundwater monitoring wells (MW-1 through MW-7) were installed during the field investigation (Sheet 2). Four (4) wells (MW-1 through MW-4) were installed by drilling to a maximum depth of 15 feet below grade using a power auger. Screened PVC pipe and solid riser was inserted into the boring below the water table and the groundwater was allowed to seep into each well for a short period of time. A bailer was then inserted into the well and a water sample was withdrawn from the water table surface. The equipment was then thoroughly cleaned and decontaminated for use in the next well. Three (3) additional wells (MW-5 through MW-7) were installed using a hand auger instead of the drill rig. Each boring was drilled to a maximum depth of



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approximately two (2) feet below the water table. The screened PVC pipe was then inserted and the groundwater was allowed to seep into the well. The sampling and decontamination procedures were again repeated for these three (3) wells.



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5.0 WATER QUALITY ASSESSMENT

The analytical results for seven (7) groundwater quality samples collected at the subject site indicated that the shallow groundwater is contaminated by several types of synthetic and volatile organic compounds. The analytical data provided in Table 1, indicates that the contamination consists of benzene, xylene, trichloroethylene, chlorobenzene, toluene, methylene chloride, 1,2 dichloroethane, 1,1 dichloroethane and bromodichloromethane. Also provided on Table 1 are the existing State of Florida maximum contaminant levels (MCL's) and the proposed State of Florida groundwater guidance concentrations, used as guidance levels to assess the degree of contamination where state MCL's are not established.

Generally, the worst contamination identified within the on-site monitoring wells occurred in wells MW-1, MW-3 and MW-4 (Sheet 2). Lesser amounts of contaminants were detected within the remaining wells. The total concentration of contaminants detected in the monitoring well MW-1 was 3,988.1 parts per billion (ppb) and included 3,650 ppb xylene, 229 ppb methylene chloride, 126 ppb chlorobenzene, and 19.8 ppb benzene. As indicated on Table 1, concentrations of benzene and 1,2 dichloromethane detected in monitoring well MW-1 exceeded the State's MCL's for those constituents. Concentrations of methylene chloride, xylene and chlorobenzene exceeded the State's guidance level concentrations.



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In monitoring well MW-3, the total concentrations of the constituents was 1180.26 ppb. State standards were exceeded by benzene (46.2 ppb) and trichloroethene (17.1 ppb). State guidance concentrations were exceeded by xylene, methylene chloride, chlorobenzene and 1,1 dichloroethane. Analytical results for monitoring well MW-4 indicated that the total concentration of contaminants detected was 959.1 ppb. State standards were exceeded by benzene (42.2 ppb) 1,2 dichloroethane (11.2 ppb) and trichloroethane (12.7 ppb). State guidance level concentrations were exceeded by xylene, methylene chloride, chlorobenzene and 1,1 dichloroethane.

Although less contamination was identified within monitoring wells MW-2, MW-6 and MW-7, several violations with respect to State standards occurred. Particularly, benzene and trichloroethene exceeded State standards in monitoring wells MW-6 and MW-7. State guidance level concentrations were exceeded by 1,1 dichloroethane in monitoring well MW-2.



6.0 CONCLUSIONS AND RECOMMENDATIONS

Results from the groundwater quality samples collected as part of this investigation indicate that the shallow aquifer is contaminated by numerous types of synthetic and volatile organic compounds. The degree of contamination is such that many of the contaminants identified exceed State standards and therefore represent groundwater quality violations. Additionally, many other contaminants which presently do not have a State standard exceeded the groundwater guidance level concentrations presently proposed by the State of Florida. These guidance level concentrations, although not standards do represent concentrations at which human health risks for the direct consumption of groundwater could result.

Results of the water quality analyses also indicate that the contamination is generally present throughout most of the site and that contamination may have migrated off-site, considering the number of sampling points that were placed adjacent to site property boundaries. Also, there is the likelihood that deeper portions of the on-site groundwater system may be contaminated by many of the detected contaminants because many of the contaminants have specific gravities greater than 1. This allows for the contaminant to sink into deeper portions of the aquifer. The vertical extent of contamination within the site is unknown at this time. It should also be understood that the types of contaminants analyzed were limited and therefore other contaminants may be present within the water table and deeper aquifers underlying the site. Determination of this however, require a more detailed study.



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At this time we are unable to formulate any type of remedial action plan for the facility because the degree and magnitude of contamination is unknown at this time. Based on preliminary data, the flow direction of the water table aquifer appears to be in a northeasterly direction. Therefore, the greatest likelihood of contamination beyond the property boundary is northeast of the site.

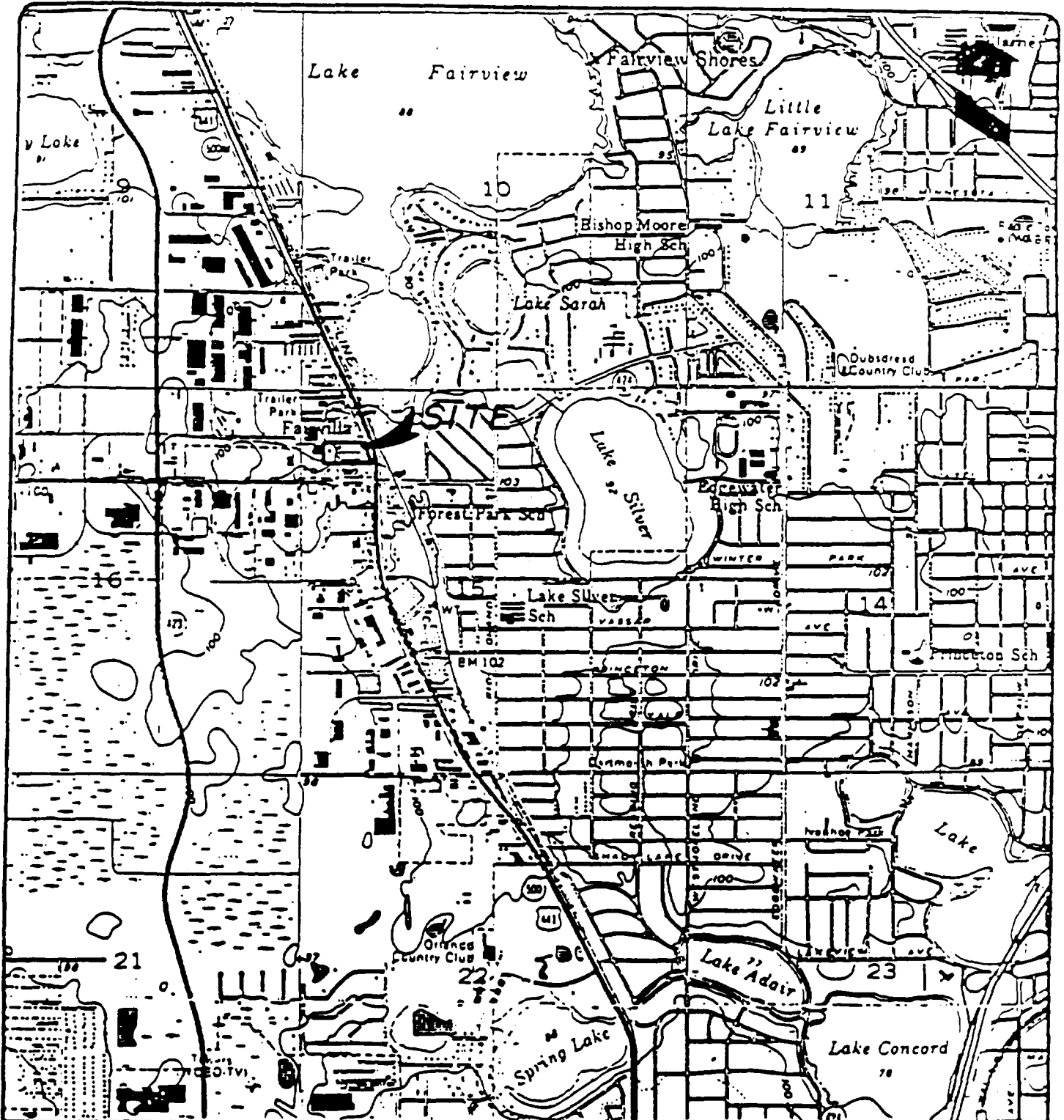
Prior to any formulation of remedial action plans for site cleanup, it will be necessary to conduct an in-depth groundwater contamination assessment of the site. The in-depth assessment not only requires the installation, development and testing of shallow aquifer monitoring wells, but would also require the installation, development and testing of deeper monitoring wells at the site. This would likely include assessment of the water quality within the Floridan aquifer. However, prior to such a study, a contamination assessment plan, would have to be developed for this specific site. The plan would include tasks necessary to assess aquifer thickness, permeability, transmissivity, the degree of vertical contamination, the thickness and permeability of any on-site confining units. Additionally, development of a site health and safety plan, a quality controlled quality assurance project plan for sample collection and analyses and would include other tasks. Should Southeastern Investment Properties, Inc. desire development of such a plan, Jammal & Associates would appreciate the opportunity to provide you with that service. A preliminary cost estimate to develop and implement a final contamination assessment plan is approximately \$35,000.00. This cost does not include the chemical analysis of soil and groundwater, since the number of tests and the analytical parameters are not known at this time.



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SHEETS

AF 380378



SECTION: 15
 TOWNSHIP: 22 SOUTH
 RANGE: 29 EAST
 REFERENCE: USGS "ORLANDO WEST, FLORIDA"
 QUADRANGLE MAP, 1956 ISSUE,
 PHOTOREVISED 1980.

VICINITY MAP
 MACK TRUCK REPAIR SHOP
 HIGHWAY 441, SOUTH OF LEE ROAD
 ORLANDO, FLORIDA



JAMMAL & ASSOCIATES, INC. Consulting Engineers

DRAWN

BKC

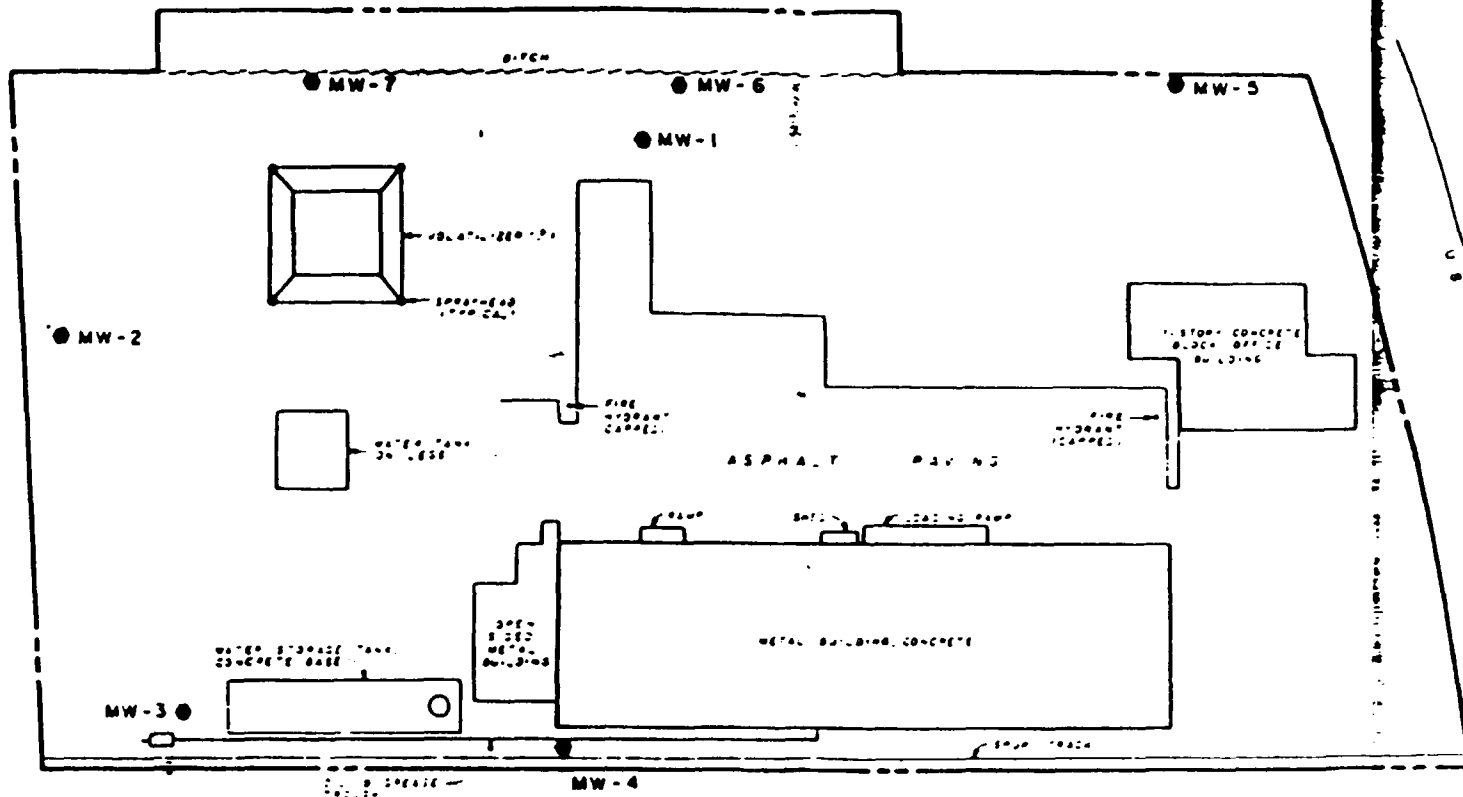
SCALE 1"=2000'

PROJ NO

87-03001



U.S. HIGHWAY 441

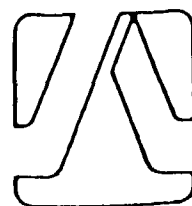
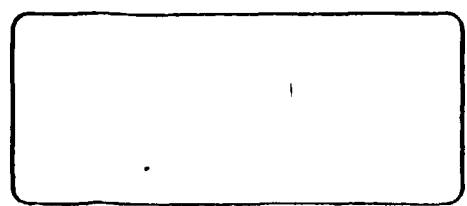


LOCATION PLAN

130
SW COR. NW 22A NW
SEC 15-22S-29E

● MONITORING WELL LOCATION

DATE	9-1-87
BY	CRA
CHKD	NEA
APP'D	



CONTAMINATION ASSESSMENT
MACK TRUCK REPAIR SHOP
HIGHWAY 441, SOUTH OF LEE ROAD
ORLANDO, FLORIDA

JAMMAL & ASSOCIATES, INC.

10/1/87 10/1/87 03001 SHEET 1 OF 1

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TABLE 1

LABORATORY RESULTS OF
COMPOUNDS PRESENT IN
GROUNDWATER

Chemical Parameter	State MCL**	State Groundwater Guidance Concentration	Detection Limit	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
Benzene	1.0	1.0	0.5	19.8	<0.5	46.2	42.2	29.7	6.8	4.0
Toluene	NS	2,000.0	0.1	21.3	<0.1	25.6	21.3	<0.5	<0.5	<0.5
Xylene	NS	400.0	0.5	3650.0	18.8	454.0	451.0	<0.5	<0.5	<0.5
Methylene Chloride	NS	5.0	0.2	229.0	<0.2	187.0	171.0	<0.2	<0.2	<0.2
1,2-Dichloroethane	3.0	3.0	0.1	32.0	<0.1	<0.1	11.2	<0.1	<0.1	<0.1
Chlorobenzene	NS	60.0	0.1	126.0	3.26	244.0	223.0	<0.1	<0.1	<0.1
1,1-Dichloroethane	NS	7.0	0.2	<0.2	122.0	35.6	26.7	<0.2	<0.2	<0.2
Bromodichloromethane	NS	100.0	1.0	<1.0	<1.0	26.7	<1.0	<1.0	<1.0	<1.0
Total THM										
Trichloroethene	3.0	3.0	0.1	<0.1	<0.1	17.1	12.7	156.0	34.9	20.3

* All values shown have units of parts per billion (ppb).

** Maximum Contaminant level (MCL) - State of Florida Primary Drinking Water Standards.

*** State of Florida Groundwater Guidance Concentrations.

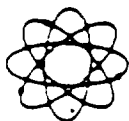
NS - No standard

1332J/pm-s

Jefferson L. Flowers, Ph. D.

Jefferson S. Flowers, Ph. D.

Ph. (305) 339-5984



FLOWERS CHEMICAL LABORATORIES

ANALYTICAL & CONSULTING CHEMISTS

Received From:

Jammal Assoc.
PO Box 339
WinterPk, FL 32789

Date Reported: Jan 14 1987

DHRS Lab# : 83139
DER Lab# : EL0096
AIHA Lab# : 253

Sample: VOC

Date Received:

Jan 8 1987

Lab Numbers: 8159-8161

REPORT OF ANALYSIS

Parameter	Unit	Method	%ACC	%PRC	8159 MW 5	8160 MW 6	8161 MW 7
		Detection Limit					
Chloroform	ppb	0.1	96.8	9.92	<0.100	<0.100	<0.100
Bromodichl_Meth	ppb	1	96.8	9.92	<1	<1	<1
diBromochl_Meth	ppb	0.1	96.8	9.92	<0.100	<0.100	<0.100
Bromoform	ppb	1	96.8	9.92	<1	<1	<1
Total_THM	ppb	10	96.8	9.92	<10	<10	<10
Benzene	ppb	0.5	96.8	9.92	29.7	6.81	3.96
Acrolein	ppb	0.5	96.8	9.92	<0.500	<0.500	<0.500
Acrylonitrile	ppb	0.5	96.8	9.92	<0.500	<0.500	<0.500
1,2-Dichloroethane	ppb	0.1	96.8	9.92	<0.100	<0.100	<0.100
1,1,1-Trichloroethane	ppb	0.2	96.8	9.92	<0.200	<0.200	<0.200
Trichloroethene	ppb	0.1	96.8	9.92	156	34.9	20.3
Carbon_TetraCl	ppb	1	96.8	9.92	<1	<1	<1
Tetrachloroethane	ppb	1	96.8	9.92	<1	<1	<1
Bromomethane	ppb	3	96.8	9.92	<3	<3	<3
Dichlorodifluoromethane	ppb	2	96.8	9.92	<2	<2	<2
Vinyl_chloride	ppb	2.5	96.8	9.92	<2.5	<2.5	<2.5
Chloroethane	ppb	3	96.8	9.92	<3	<3	<3
Methylene_chloride	ppb	0.2	96.8	9.92	<0.200	<0.200	<0.200
Trichlorofluoromethane	ppb	0.5	96.8	9.92	<0.500	<0.500	<0.500
1,1-Dichloroethane	ppb	0.2	96.8	9.92	<0.200	<0.200	<0.200
1,1-Dichloroethene	ppb	0.2	96.8	9.92	<0.200	<0.200	<0.200
1,1,2-Dichloroethene	ppb	0.1	96.8	9.92	<0.100	<0.100	<0.100
1,2-Dichloropropane	ppb	0.1	96.8	9.92	<0.100	<0.100	<0.100
1,1,3-Dichloropropene	ppb	0.1	96.8	9.92	<0.100	<0.100	<0.100
1,1,2-Trichloroethane	ppb	0.1	96.8	9.92	<0.100	<0.100	<0.100
1,1,3-dichloropropene	ppb	0.1	96.8	9.92	<0.100	<0.100	<0.100

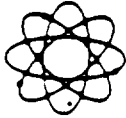
Data Release Authorization

Sample integrity and reliability certified by Lab personnel prior to analysis.
Methods of analysis in accordance with FCL QA and EPA approved methodology

Jefferson L. Flowers, Ph. D.

Jefferson S. Flowers, Ph. D.

Ph (305) 339-5984



FLOWERS CHEMICAL LABORATORIES

ANALYTICAL & CONSULTING CHEMISTS

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Jammal Assoc.
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DHRS Lab# : 83139
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Jan 8 1987

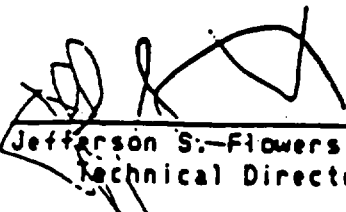
Lab Numbers: 8159-8161

REPORT OF ANALYSIS

Parameter	Unit	Method	%ACC	%PRC	8159 MW 5	8160 MW 6	8161 MW 7
		Detection Limit					
2-Chlorethvin_ether	ppb	1	96.8	9.92	<1	<1	<1
1,2,2-Tetrachloroeth	ppb	0.5	96.8	9.92	<0.500	<0.500	<0.500
Chloromethane	ppb	3	96.8	9.92	<3	<3	<3
Chlorobenzene	ppb	0.1	96.8	9.92	<0.100	<0.100	<0.100
1,3-Dichlorobenzene	ppb	0.2	96.8	9.92	<0.200	<0.200	<0.200
1,2-Dichlorobenzene	ppb	0.2	96.8	9.92	<0.200	<0.200	<0.200
1,4-Dichlorobenzene	ppb	0.2	96.8	9.92	<0.200	<0.200	<0.200
Toluene	ppb	0.5	96.8	9.91	<0.500	<0.500	<0.500
Xylene	ppb	0.5	96.8	9.91	<0.500	<0.500	<0.500

Data Release Authorization

Sample integrity and reliability certified by Lab personnel prior to analysis.
Methods of analysis in accordance with FCL QA and EPA approved methodology.

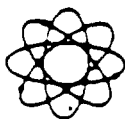

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FLOWERS CHEMICAL LABORATORIES

ANALYTICAL & CONSULTING CHEMISTS

Received From:

Jammal Assoc.
PO Box 339
WinterPK, FL 32789

Date Reported: Jan18 1987

DHRS Lab# : 83139
DER Lab# : EL0096
AIHA Lab# : 253

For: VOC

Date Received:

Jan 5 1987

Lab Numbers: 8042-8045

REPORT OF ANALYSIS

Parameter	Unit	Method	%ACC	%PRC	8042 1	8043 2	8044 3	8045 4
	Detection Limit							
Chloroform	ug/L	0.1	96.8	9.92	<0.100	<0.100	<0.100	<0.100
Bromodichl_Meth	ug/L	1	96.8	9.92	<1	<1	26.7	<1
diBromochl_Meth	ug/L	0.1	96.8	9.92	<0.100	<0.100	<0.100	<0.100
Bromoform	ug/L	1	96.8	9.92	<1	<1	<1	<1
Total_THM	ug/L	10	96.8	9.92	<10	<10	<10	<10
Benzene	ug/L	0.5	96.8	9.92	19.8	<0.500	46.2	42.2
Acrolein	ug/L	0.5	96.8	9.92	<0.500	<0.500	<0.500	<0.500
Acrylonitrile	ug/L	0.5	96.8	9.92	<0.500	<0.500	<0.500	<0.500
1,2-Dichloroethane	ug/L	0.1	96.8	9.92	32	<0.100	<0.100	11.2
1,1,1-Trichloroethane	ug/L	0.2	96.8	9.92	<0.200	<0.200	<0.200	<0.200
Trichloroethene	ug/L	0.1	96.8	9.92	<0.100	<0.100	17.1	12.7
Carbon_TetraCl	ug/L	1	96.8	9.92	<1	<1	<1	<1
Tetrachloroethane	ug/L	1	96.8	9.92	<1	<1	<1	<1
Bromomethane	ug/L	3	96.8	9.92	<3	<3	<3	<3
Dichlorodifluoromethane	ug/L	2	96.8	9.92	<2	<2	<2	<2
Vinyl_chloride	ug/L	2.5	96.8	9.92	<2.5	<2.5	<2.5	<2.5
Chloroethane	ug/L	3	96.8	96.9	<3	<3	<3	<3
Methylene_chloride	ug/L	0.2	96.8	9.92	229	<0.200	187	171
Trichlorofluoromethane	ug/L	0.5	96.8	9.92	<0.500	<0.500	<0.500	<0.500
1,1-Dichloroethane	ug/L	0.2	96.8	9.92	<0.200	122	35.6	26.7
1,1-Dichloroethene	ug/L	0.2	96.8	9.92	<0.200	<0.200	<0.200	<0.200
1,1,2-Dichloroethene	ug/L	0.1	96.8	9.92	<0.100	<0.100	<0.100	<0.100
1,2-Dichloropropane	ug/L	0.1	96.8	9.92	<0.100	<0.100	<0.100	<0.100
1,3-Dichloropropene	ug/L	0.1	96.8	9.92	<0.100	<0.100	<0.100	<0.100
1,1,2-Trichloroethane	ug/L	0.1	96.8	9.92	<0.100	<0.100	<0.100	<0.100
1,1,3-dichloropropene	ug/L	0.1	96.8	9.92	<0.100	<0.100	<0.100	<0.100

Data Release Authorization

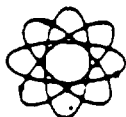
Sample integrity and reliability certified by Lab personnel prior to analysis.
Methods of analysis in accordance with FCL QA and EPA approved methodology.

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FLOWERS CHEMICAL LABORATORIES

ANALYTICAL & CONSULTING CHEMISTS

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AIHA Lab# : 253

For: VOC

Date Received:

Jan 5 1987

Lab Numbers: 8042-8045

REPORT OF ANALYSIS

Parameter	Unit	Method	%ACC	%PRC	8042	8043	8044	8045
					1	2	3	4
		Detection						
		Limit						
2-Chlorethvin_ether	ug/L	1	96.8	9.92	<1	<1	<1	<1
122-Tetrachloroeth	ug/L	0.5	96.8	9.92	<0.500	<0.500	<0.500	<0.500
Chloromethane	ug/L	3	96.8	9.92	<3	<3	<3	<3
Chlorobenzene	ug/L	0.1	96.8	9.92	126	3.26	244	223
Toluene	ug/L	0.1	96.8	9.92	21.3	<0.100	25.6	21.3
Xylene	ug/L	0.5	96.8	9.92	3650	18.8	454	451
13_Dichlorbenzene	ug/L	0.2	96.8	9.92	<0.200	<0.200	<0.200	<0.200
12_Dichlorbenzene	ug/L	0.2	96.8	9.92	<0.200	<0.200	<0.200	<0.200
14_Dichlorbenzene	ug/L	0.2	96.8	9.92	<0.200	<0.200	<0.200	<0.200

Data Release Authorization

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Technical Director

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TABLES